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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,925	08/20/2003	Hiroyuki Yamada	056205.48558C1	4766

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EXAMINER

MILLER, CARL STUART

ART UNIT PAPER NUMBER

3747

DATE MAILED: 08/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/643,925	YAMADA ET AL	
	Examiner	Art Unit	
	Carl S. Miller	3747	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 03 May 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 11-14, 26 and 28-35 is/are pending in the application.
- 4a) Of the above claim(s) 31-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11-14, 26, 28-30 and 35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11-13, 26, 28-30 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kraemer in view of Wilber.

Kraemer, as noted in earlier office actions, teaches a fuel injection pump with all of the applicant's claimed features except the second spring biasing the holder in the outward position and thereby causing the inlet valve to be held open. While this feature is not shown by Kraemer, the mechanism is held open by some manner since the activation of the solenoid appears to retract the holder, thereby allowing the check valve to close.

Wilber (UK('941)) teaches a check valve that includes a ball valve biased by a first spring and a larger spring that biases a holder in a direction to hold the check valve open. The solenoid is used to overcome the bias of the second spring and allow the check valve to close.

It would have been obvious to modify Kraemer by constructing the check valve as taught by Wilber because the latter valve was also used as an injection timing device by allowing fluid to be released from a timing chamber as opposed to the pumping chamber

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kraemer and Wilber as applied to claim 11 above, and further in view of Yasuhara.

Yasuhara teaches the use of an injection pump inlet solenoid valve that does not set the beginning of injection, but instead closes at a fixed time. This is possible because the timing is set by rotation of the pump cam mechanism

It would have been obvious to modify Kraemer by using the inlet solenoid to set only the end of injection since it was known in the art to use other means to set the beginning of injection even in a system having a solenoid-controlled inlet.

Applicant's arguments filed 5/03/06 have been fully considered but they are not persuasive. In particular, the rejection under obvious-type double patenting has been overcome by the applicant's terminal disclaimer and is hereby withdrawn. A new rejection has been applied above since the examiner has reconsidered the art of record and found that the Wilber reference is basically identical in structure to the applicant's inlet valve. Furthermore, the Kraemer inlet valve is identical to the extent that the details of that valve are shown. Thus, because the two valves were being used in very similar environments, it would have been obvious to substitute the details of the Wilber valve for the missing details of the Kraemer valve.

Since this new rejection was not precipitated by the applicant's amendment, this action has been made non-final.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carl S. Miller whose telephone number is 571-272-4849. The examiner can normally be reached on MTWTHF.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Cronin, can be reached on 571-272-4536. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Carl S. Miller  
Primary Examiner